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ABSTRACT

Physical educators must explore the interrelationships between persons and their total human environment to promote optimal learning. This form of needs assessment broadens the concept of teaching from a student- and school-based perspective to one encompassing the home and community. This ecological approach is more crucial in facilitating behavior change in handicapped children than in their nonhandicapped peers, since individualized education for handicapped students involves parental consultations. The ecological approach has been discussed in the literature of psychology and education, both as a factor in naturalistic research, and as a theory in human development. Current inservice programs are frequently created and presented without much thought to the general needs of the teachers and students. In contrast, the ecological approach calls for extensive interactions between a university trainer and prospective trainees, beginning with several days of observing and meeting with teachers, parents, and children in the school setting. The university-based inservice trainer acts as a facilitator by bringing together diverse groups which have not worked together, but do operate in the same ecosystem. (FG)

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An Ecological Approach to Needs Assessment For Inservice Training

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An Ecological Approach to Needs Assessment

For Inservice Training

> Human ecology refers to relationships of man to man, as well as between man and his total environment . . . Society has done poorly in providing a social and cultural environment whereby diverse peoples can live in peace with themselves and in harmony with the physical environment. . . It is questionable whether we can ever learn to care for the physical world until we have love and respect for our fellow men and at the same time have respect for ourselves as individuals. . . human ecology must be foremost in the ecological spectrum. No fields of education have more potential for improving the self concept of the individual than health, physical education, and recreation. (p. 389) Julian W. Smith

The purpose of this paper is to present an ecological approach to needs assessment for inservice training. This approach, which stresses the mutuality of relationships between university-based inservice trainers and the total ecology, entails extensive cooperative planning in the community where inservice is to be conducted. My experience with inservice training is limited mostly to adapted and developmental physical education; therefore I shall discuss inservice education from this perspective.

An inservice training approach must necessarily be consonant with one's philosophy of teaching. I shall therefore discuss briefly my beliefs about adapted physical education and the ecological process and

state a rationale explaining why the ecological approach is crucial to causing behavior change in handicapped children and youth. Next a brief review of literature will be presented. Then I shall focus specifically on the use of the ecological process in needs assessment. Last, Garth Tymeson will discuss his dissertation which is action research illustrating the application of the ecological process in the development and implementation of an interagency inservice training model for several school districts within one of the 20 educational service center regions which comprise Texas. The ecological process, as used in this paper, is defined as the purposive use of interrelationships between persons and their total environment, both human and physical, to promote optimal learning.

The Ecological Process and Adapted Physical Education Service Delivery

Few physical educators, with the exception of Smith (1975), have written about ecological approaches to teaching and/or research. Yet most of us involved in the inservice training of regular educators agree that much of the success of handicapped children in the mainstream depends upon the teacher's skill in removing architectural, attitudinal, and aspirational barriers, i.e. facilitating favorable interrelationships which contribute to social acceptance and good self concept and subsequently to effective learning. Sherrill (1981) indicates that the major purpose of adapted physical education is the same as that of regular physical education: to change psychomotor behaviors. Differences between the two areas lie primarily in teaching methodologies, i.e. the emphasis

on self concept and/or body image work and on peer acceptance, socialization, and other aspects of the ecological process. According to Sherrill (1981),

> The ecological process stresses the mutuality of relationships between handicapped students and their total environment, physical and social, including family, neighbors, and significant others. Not only do adapted physical education specialists adapt the environment, but they also teach coping skills. Operationally defined, adaptation is the mode by which persons cope with the environment. Handicapped as well as normal students must learn to adapt to both their physical and social environments. (p. 19)

Belief in the viability of the ecological process as a method of causing behavior change tends to broaden one's concept of teaching from a school based activity to a home/community/school cooperative effort. This in turn changes the scope of the teacher's activities from instruction within a classroom or gymnasium to delivery of a broad spectrum of services in a variety of environments. These services, partly determined by PL 94-142, include psychomotor assessment, individualized educational programming (IEP), developmental and/or prescriptive teaching, counseling, and coordination of related resources/services so as to provide optimum physical education experiences. Almost all of these services are performed more effectively in conjunction with parents and significant others in the handicapped child's total environment than by teachers working alone in the 6-hour-a-day school setting.

The ecological approach is advantageous to our profession as well as to handicapped children. I strongly believe that through interacting with parents and the community at large we can strengthen our profession

and improve the quality of physical education that all children receive. Too long we have conceptualized ourselves as school-based persons when we should be functioning as citizens, active in shaping local school board policy and facilitating state and federal legislation and budget appropriations favorable to education. Learning to be advocates for the handicapped has taught many of us how to advocate for our profession. PL 94-142 requires that parents be involved in the IEP process. Parents can therefore be powerful forces in assuring that appropriate physical education is built into their child's IEP and consequently the curriculum. To do so, however, many parents must be taught the values of physical education. This is best done by our interacting with parents and sharing their concerns in broad diverse areas like housing, employment, transportation, and civil rights. As we work in partnership with parents to improve the total ecology for handicapped children, they will begin to advocate for our concerns and work as change agents for improved physical education. Carl Rogers (cited in Buscaglia, 1975) stated in this regard: "the warm, subjective, human encounter of two persons is more effective in facilitating change than the most precise art or technique growing out of learning theory or operant conditioning" (p. 287). Too long physical educators have had "warm, subjective, human encounters" only with students and other teachers. Use of the ecological process will broaden our contacts and strengthen our impact.

The Ecological Approach As Crucial to Behavior Change

The only way to teach the whole child is to understand and use the total social environment in which he or she lives. Let's focus upon three

problems that handicapped persons typically experience to a greater degree than their nonhandicapped peers: (a) obesity; (b) poor transfer of physical education learnings into use of leisure time; and (c) isolation and loneliness. Properly planned and conducted physical education experiences can contribute to the amelioration of each, but only with family cooperation.

To cause behavior change in these and other areas, physical educators must become involved in parent and community education. Assessment skills must broaden to include family members and significant others in the handicapped child's life, the interactions among these persons, and the combined human and physical resources for changing behaviors. Individualized educational programming must encompass home as well as school physical activity programs with particular attention given to commitment to achievement of the same objectives and consistency in the application of behavior management and/or prescriptive teaching must be implemented so that parents and siblings serve as models as well as teachers and classmates. Home teaching must supplement school instruction. Persons from all of the different social mileaus of the child must be involved in periodic needs assessment, subsequent planning, and continuous evaluation. Certainly this global approach to behavior change is not easy, but it does represent an alternative to the well documented failures of schools as change agents in such significant areas as weight control and cardiovascular fitness, active vs sedentary leisure life styles, and satisfying, self actualizing human relationships.

The ecological approach to educating the handicapped is important also because mental retardation and emotional problems are closely related to poverty. Smith (1977) indicates that three in four children identified as retarded reside in urban or rural slums. Children of blue collar and/or

unemployed workers are 15 times more likely to be diagnosed as retarded as those from higher-income families. Income for the blue collar worker, when adjusted for inflation, is continuing to decline. Projections for this group include more unemployment, earlier retirement, and shorter work weeks -- thus more leisure or free time in which they could be encouraged to participate in collaborative home/school/community education projects. The ecology of the poor is very different from that of most teachers and thus demands special study (Lightfoot, 1978; Moock, 1979).

Sociologically, the handicapped are considered a minority group (Wright, 1960; Gliedman and Roth, 1980). Their problems are largely the same as those of other minorities. Chief among these are the attitudes and beliefs of their nonhandicapped peers and the significant others in their lives. The major need of many handicapped children being integrated into mainstream physical education is not assistance with motor skills and fitness but rather help with peer acceptance. Donaldson (1980) reviewed 49 research studies pertaining to changing attitudes toward handicapped persons; not one of these was conducted by a physical educator or took place in a physical education setting. Yet it is common knowledge that mainstreaming occurs in physical education, the arts, and vocational training more often than in the so-called basics. Educators know very little about the ecology of minority groups and almost nothing concerning the environmental factors operative in peer acceptance in games, sports, and dance before, during, and after school.

In summary, the ecological approach seems more crucial to facilitating behavior change in handicapped children than in their normal peers. Certainly they and their families have more problems than others. It is impossible, however, to work in the ecosystem of a handicapped person

without affecting and being affected by the nonhandicapped. In my thinking, I seem to be moving toward the recommendation of Hobbs (1979) that "the public schools (in addition to their traditional educational responsibility) be made the focus of responsibility for the coordination of health and social services needed by families in the rearing of their children" (p.200). Some agency ultimately must serve as the superstructure for ecologically based needs assessment and service. In spite of their weaknesses, I have more faith in schools than in other agencies. I believe that we, as educators -- taught to implement ecological strategies -- can be change agents.

The Ecological Approach as Discussed in the Literature

The initial use of the term "ecological approach" is accredited to Herbert Wright and Roger Barker, whose work at the Midwest Psychological Field Station at the University of Kansas can be traced back to the 1950s (Wright & Barker, 1950; Barker & Wright, 1951, 1955; Barker, 1963, 1968; Barker & Gump, 1964). Both men were psychologists with strong Gestalt backgrounds. Barker indicates that their theoretical base was the work of Kurt Lewin (1936) on psychological environment, i.e. "life-space (the world as a particular person perceives and is otherwise affected by it" (barker, 1968, p.1). Ecological psychology, as defined by Barker (1968), is "concerned with both the psychological environment ... and the ecological environment (the objective, preperceptual context of behavior; the real-life settings within which people behave)" (p.1).

It would be interesting to know if Julian Smith, the only physical educator I have found who used the term human ecology, was acquainted with the works of Barker and Wright. I must confess that I was not when I first conceptualized an ecological approach. My first exposure to Barker & Wright's

use of the ecological approach was in a book entitled Direct Observation and Measurement of Behavior (Hutt & Hutt, 1970). These authors clearly favored the ethnological approach over the ecological and, in retrospect, seem somewhat biased in their comparison of the two observational methods. In spite of their bias, I liked the ecological approach, and was motivated to order Barker's 1968 book, Ecological Psychology, which bears the subtitle "Concepts and Methods for Studying the Environment of Human Behavior."

> The aims of the ecological approach were, according to Barker (1967): to describe the life situation of individuals ... in order (i) to study behaviors not easily produced in the laboratory (e.g. extreme aggression, affection); (ii) to show the sequential dependencies amongst different items of behavior, and (iii) to corroborate laboratory findings (e.g. personality studies) by direct observation of particular critical incidents (p. 1, 64-65).

The process entailed making detailed commentaries of all activities and stimuli into which a child comes in contact within his or her natural habitat. Brandt (citing Gutmann, 1969) states that "the fundamental assumption underlying ecological psychology probably is the notion of an intrinsic order in human events and behavior that will occur with consistency and regularity within and in response to surrounding environmental forces ... the task of the observer is to discern how behavioral patterns change as they interact with setting and contextual forces" (p. 15).

Often ecological approach is equated with naturalistic research and/or observational data collection techniques. Vasta (1979), for instance, discusses five approaches for investigating human behavior: (a) developmental, (b) cross-cultural, (c) comparative or cross-species, (d) ecological, and

(e) ethological. Brandt (1975) advocates four observational perspectives that hold promise for the improvement of teacher education, both preservice and inservice: (a) ecological psychology; (b) ethological research, (c) interaction analysis, and (d) behavior modification. Vasta (1979) indicates that the popularity of the ecological approach has recently "increased a great deal" (p. 40), particularly in the area of social development. He states:

> Psychologists have become increasingly interested, for example, in studying reciprocal relationships between children or between children and adults. That is, a child's behavior may be determined by aspects of the environment (including other people), but its behavior may also be one determinant of the behavior of other individuals ... Such reciprocal (interdependent) relationships among behaviors can be very complex and difficult to analyze ... Ecologists contend that the place to investigate these interactions is the natural environment." (p. 40).

The continued impact of the University of Kansas group (Barker, Wright, Gump, Kounin, & Schoggen) on the refinement of the ecological approach is documented by the 247 paged proceedings of a conference on ecology and behavior held there in 1976 (Rogers-Warren & Warren, 1977).

In 1979, however, a new and exciting research text on ecology of human development was published by Bronfenbrenner, a professor of psychology and human development and family studies at Cornell University. While he accredits many primary sources (Lewin, Mead, Piaget, Fisher, and others) as having written books that were helpful in the evolution of his ideas, Bronfenbrenner does not formally acknowledge anyone in the University of

Kansas group. He opens his text with the statement that he is offering "a new theoretical perspective for research in human development. The perspective is new in its conception of the developing person, of the environment, and especially of the evolving interaction between the two" (p. 3). Later he states: "this work may be viewed as an attempt to provide psychological and sociological substance to Lewin's brilliantly conceived topological territories" (p. 9).

Indeed Bronfenbrenner's concept of the ecological approach appears to be much broader than that of the Kansas group and, for me, presented in a more interesting and understandable writing style. Bronfenbrenner's definition of development is somewhat unique: "the person's evolving conception of the ecological environment, and his relation to it, as well as the person's growing capacity to discover, sustain, or alter its properties" (p. 9). In relating this to adapted and developmental physical education, I strongly believe that we should teach the handicapped to act as his/her own change agent in the ecology rather than narrowly interpreting our role as adapting it for them.

Numerous other innovative thinkers in various disciplines are currently using the ecological approach in a nonresearch context. Goodlad (1979), for instance, states: "A useful theoretical model for viewing and improving educational conditions in schools is what, for want of a better term, I call an ecological perspective ... An ecological model of schooling is concerned primarily, then, with interactions, relationships, and interdependencies within a defined environment ... the metaphoric use of ecological concepts is obviously helpful in promoting our conceptual grasp of education as a system larger than, but including, schools" (pp. 76-77). Goodlad bases his discussion on a definition of ecology by Margolef (1968).

Hobbs (1966, 1975, 1979), well known among special educators for his advocacy of ecological strategies, believes that the only way to help students with problems is "to involve the child, his family, his school, and his community in a cooperative assessment of the problem and a shared design for its solution ... Schools that take their educational tasks seriously know now that they must extend their efforts to the family and to the earliest years of the child's life (1975, p. 195, 197). He proposes that we, as teachers, direct our service delivery toward the ecosystem of each child rather than the individual. The ecosystem which he diagrams (1975, p. 193) and discusses is comprised of the student and all of the significant others in family, community, neighborhood, and school.

Leichter (1979) reviews the ideas emanating from two seminars on the relationship between the family as educator and the other institutions that educate as well as much of the literature pertaining to interrelationships in educational theory and practice. Although her actual use of the term ecology is limited to references to Bateson (1972), Barker & Wright (1951, 1955), and Lewin (1936), she makes a strong case for the application of an ecological approach in the solution of education's ills.

Works by Zeichner (1980) and Smith & Smith (1979) are among the recent articles in the Journal of Teacher Education which review research concerning teaching which takes an ecological perspective. Smith & Smith (1979) reported that socioeconomic factors of the student teaching placement seemed to affect the self-concept of student teachers, tentatively concluding that "a student teaching experience in a poverty area erodes a student's feeling of self esteem" (p. 48). Zeichner (1980) indicates that the common belief that student teachers are socialized mainly through relationships with the cooperative teacher should be reanalyzed to consider the effects of the

entire classroom ecological system. It is interesting, however, to note that most teacher education research pertaining to human ecology focuses exclusively on a classroom or a school rather than encompassing the family, community, and neighborhood. This narrowness which so often characterizes the teaching profession is, I believe, our fatal flow -- the reason that schools so often fail to elicit lasting, measurable change, particularly in habits, practices, and lifestyles. Working alone in exclusively a school setting, I do not believe that we can change the lives of handicapped children or the significance of physical education in the value systems of people in general.

The Ecological Approach to Inservice Training

Inservice training then becomes a viable and accepted way of extending our teaching beyond the university's boundaries (Sherrill, 1979). Research (Stanford Center, 1976) indicates that the school is a better location for inservice than the university. It also indicates that the success of the inservice depends largely on who is to conduct it. In descending order, the most successful inservice trainers are "the teacher himself, another practicing teacher, a supervisor or administrator, and a university professor. The teacher is his own best change agent in properly designed inservice teacher education programs" (p. 21). In spite of such findings, the federal government continues to fund university based projects to increase awareness of PL 94-142 in the public schools and to assist direct service delivery personnel in its implementation. Funding priorities in physical education for the handicapped have clearly changed from preservice to inservice, and writing inservice training grants has become the major way of creating salaries for new faculty and graduate assistants in adapted physical education.

Often the new personnel are from out-of-state and know little of the cultural, sociological, and economic characteristics of the communities to which they must drive to fulfill inservice training commitments. Too frequently such persons have been allowed to view their role narrowly as the presentation of predetermined information ... the one-day workshop format with success measured by pre and post tests of knowledge.

In contrast the ecological approach calls for extensive interactions between university trainer and the prospective trainees. This begins with comprehensive needs assessment, i.e. several days of observing and interacting during which rapport is established with teachers, parents, and children in the new community and/or school setting. During this time cooperative planning begins to occur, and sharing focuses upon discrepencies between current and desired status with respect to goals. Through infusing the ecology, the trainer can identify the ecosystem's human resources and facilitate the optimal use of their talents. By recognizing such potential school/community leaders as models, the university-based trainer can assist teachers to become their own change agents and those of their colleagues.

Inservice training does not have to be the presentation of new information, methods, or materials by an outside expert; it can instead be conducted by resource teams of teachers, parents, and children brought together and encouraged by the "expert" who purposely maintains a low profile, i.e. serves as a facilitator rather than speaker/presentor/demonstrator.

Needs assessment from the ecological perspective includes several phases: (a) preparation before going to the new school or community by

background reading and conferring with human resources in one's own setting who are familiar with the selected ecosystem; (b) establishing dates, places, and resources by telephone or correspondence for planning days, actual workshop times, and follow up days; (c) engaging in participant-observer role while becoming familiar with the physical and human resources within the ecosystem; (d) cooperative establishing of goals -- what teaching practices and learning conditions the trainees agree should characterize their system; (e) cooperative analysis of discrepency between existing and desired status in relation to each goal; (f) identification of changes needed in order to reduce these discrepancies; (g) identification of existing resources and decision making as to how they can be most effectively used; (h) facilitating the development of commitment to action on the part of members of the ecosystem; and (i) continuous reassurance and values clarification as needed.

In many instances the most important role of the university-based inservice trainer is the bringing together of diverse groups who have not previously worked together, like parents and teachers or handicapped students and the nonhandicapped. Whenever possible handicapped adults in the community should be involved as resource persons and models.

Much of success in any education endeavor lies in the extent to which persons care and perceive that others care. The inservice trainer becomes the model in this respect. By showing that he/she cares about all aspects of the ecology, the university person facilitates caring and sharing in others. This leads to action -- and ultimately change.

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